Banking with Stablecoins

Itai Agur[1] Alexander Copestake[1] Giovanni Dell'Ariccia[1,2] Marco Reuter[1]

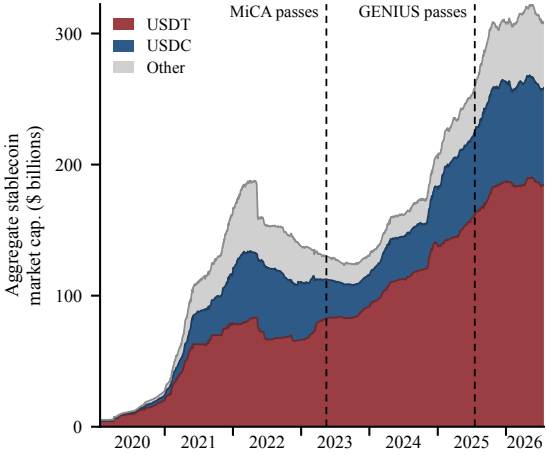
[1]International Monetary Fund
[2]CEPR

November, 2026

The views expressed in this presentation are those of the authors and should not be attributed to the IMF, its Executive Board, or IMF management.

Stablecoins have grown fast, but issuer safety varies

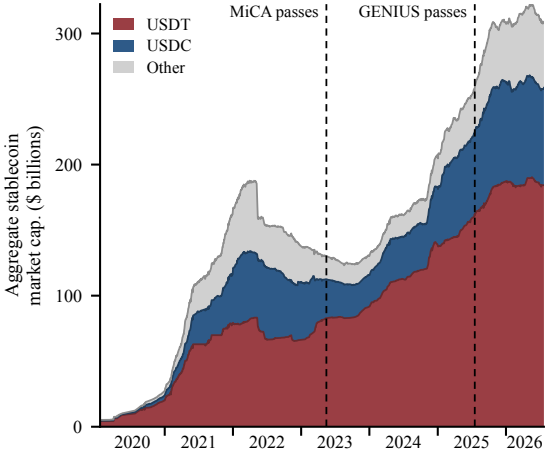
Stablecoin market capitalization (billion USD)



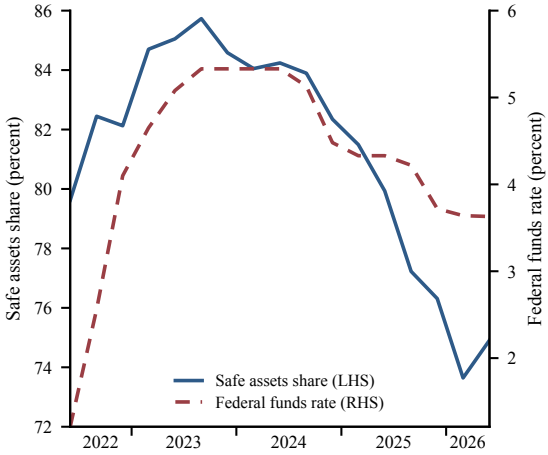
Source: **DefiLlama**

Stablecoins have grown fast, but issuer safety varies

Stablecoin market capitalization (billion USD)



Safe-asset share of largest stablecoin issuer (%)



Source: **DefiLlama; Tether reports; St. Louis Fed**

Stablecoin issuers

- Issuers of well-backed stablecoins (**SC issuers**) are **narrow banks**:
  - Offer demandable liabilities
  - Secured by risk-free assets
  - Usable directly for payments

Stablecoin issuers

- Issuers of well-backed stablecoins (**SC issuers**) are **narrow banks**:
  - Offer demandable liabilities
  - Secured by risk-free assets
  - Usable directly for payments

- Narrow banking has a checkered history:
  - 1780s: Bank of Amsterdam drifted into risky lending (*Bolt et al., 2024*)
  - 1880s: Deposits displace national bank notes (*Gorton & Zhang 2023, Luck 2025*)
  - 2017: Fed blocked TNB on financial-stability grounds (*Cochrane 2018*)

Research questions

- **Stablecoins as narrow banks**
  - When is a SC issuer's pledge to remain narrow credible?
  - How does this affect commercial banks and overall welfare?

Research questions

- **Stablecoins as narrow banks**
  - When is a SC issuer's pledge to remain narrow credible?
  - How does this affect commercial banks and overall welfare?
- **How should regulators respond?**
  - When should they enforce the pledge?
  - How does that depend on the risk-free rate?

Research questions

- **Stablecoins as narrow banks**
  - When is a SC issuer's pledge to remain narrow credible?
  - How does this affect commercial banks and overall welfare?
- **How should regulators respond?**
  - When should they enforce the pledge?
  - How does that depend on the risk-free rate?
- **Do SC issuers want to be regulated?**
  - Does their preferred regulation diverge from the social optimum?

Research questions

- **Stablecoins as narrow banks**
  - When is a SC issuer's pledge to remain narrow credible?
  - How does this affect commercial banks and overall welfare?
- **How should regulators respond?**
  - When should they enforce the pledge?
  - How does that depend on the risk-free rate?
- **Do SC issuers want to be regulated?**
  - Does their preferred regulation diverge from the social optimum?
- **Should stablecoins be allowed to pay interest?**
  - Is a ban on interest payments optimal?

New to the literature

- Stablecoins as narrow banks *(Chiu & Monnet, 2024; Huang & Keister, 2026; Parlour, Rajan & Zhu, 2026)*
  - **When is a SC issuer's pledge to remain narrow credible?**
  - How does this affect commercial banks and overall welfare?
- How should regulators respond **given SC issuer deviation concerns**?
  - When should they enforce the pledge?
  - How does that depend on the risk-free rate and SC issuers' lending ability?
- **Do SC issuers want to be regulated?**
  - Does their preferred regulation diverge from the social optimum?
- Should stablecoins be allowed to pay interest?
  - Is a ban on interest payments optimal?

Key results

- Regulation helps to keep SC issuers narrow

Key results

- Regulation helps to keep SC issuers narrow
- SC issuers want *some* regulation, but less than is socially optimal

Key results

- Regulation helps to keep SC issuers narrow
- SC issuers want *some* regulation, but less than is socially optimal
- Lower risk-free rates increase penalties needed for narrowness

Key results

- Regulation helps to keep SC issuers narrow
- SC issuers want *some* regulation, but less than is socially optimal
- Lower risk-free rates increase penalties needed for narrowness
- A ban on stablecoin interest is never optimal when penalties are costless

Model

Banks

- A unit mass of risk-neutral banks, which maximize expected profit and compete for deposits on rates

Banks

- A unit mass of risk-neutral banks, which maximize expected profit and compete for deposits on rates

- Banks raise deposits at a (gross) rate $r_D \geq 1$ and lend to risky private projects, which return R_P with probability $p \in (0, 1)$ and zero otherwise

Banks

- A unit mass of risk-neutral banks, which maximize expected profit and compete for deposits on rates

- Banks raise deposits at a (gross) rate $r_D \geq 1$ and lend to risky private projects, which return R_P with probability $p \in (0, 1)$ and zero otherwise

- Limited liability: depositors are repaid only when the loans succeed, so a deposit is worth $p\, r_D$

Banks

- A unit mass of risk-neutral banks, which maximize expected profit and compete for deposits on rates
- Banks raise deposits at a (gross) rate $r_D \geq 1$ and lend to risky private projects, which return R_P with probability $p \in (0, 1)$ and zero otherwise
- Limited liability: depositors are repaid only when the loans succeed, so a deposit is worth $p\, r_D$
- Bank loans earn more than safe assets: $pR_P - R_G > 0$

SC issuers

- A unit mass of risk-neutral SC issuers, which maximize expected profit and compete for funds on (gross) rates $r_S \geq 1$

SC issuers

- A unit mass of risk-neutral SC issuers, which maximize expected profit and compete for funds on (gross) rates $r_S \geq 1$
- **"Narrow mode":** pledge to hold only government bonds, which return $R_G > 1$

SC issuers

- A unit mass of risk-neutral SC issuers, which maximize expected profit and compete for funds on (gross) rates $r_S \geq 1$
- **"Narrow mode":** pledge to hold only government bonds, which return $R_G > 1$
- **"Risky mode":** make loans instead, which return R_P with probability $q < p$
  - For this presentation: $qR_P < R_G$

SC issuers

- A unit mass of risk-neutral SC issuers, which maximize expected profit and compete for funds on (gross) rates $r_S \geq 1$
- **"Narrow mode":** pledge to hold only government bonds, which return $R_G > 1$
- **"Risky mode":** make loans instead, which return R_P with probability $q < p$
  - For this presentation: $qR_P < R_G$
- **Regulation**: a SC issuer that is risky bears a non-pecuniary penalty $B \geq 0$ per unit

Households

- A unit mass of risk-neutral households, each with one unit of wealth, saved in deposits or stablecoins

Households

- A unit mass of risk-neutral households, each with one unit of wealth, saved in deposits or stablecoins
- Household i values a deposit at $p\, r_D$ and a stablecoin at $V_S + \epsilon_i$, where $V_S = r_S$ if the SC issuer is narrow and $q\, r_S$ if it is risky

Households

- A unit mass of risk-neutral households, each with one unit of wealth, saved in deposits or stablecoins
- Household i values a deposit at $p\, r_D$ and a stablecoin at $V_S + \epsilon_i$, where $V_S = r_S$ if the SC issuer is narrow and $q\, r_S$ if it is risky
- Households have different taste for stablecoins over deposits: $\epsilon_i \sim U[-\beta, \beta]$

Timing

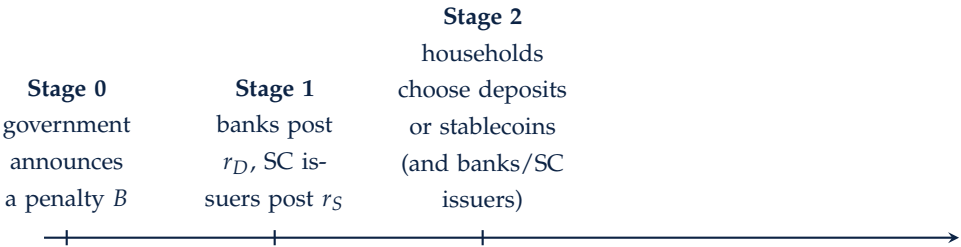
Stage 0
government
announces
a penalty B



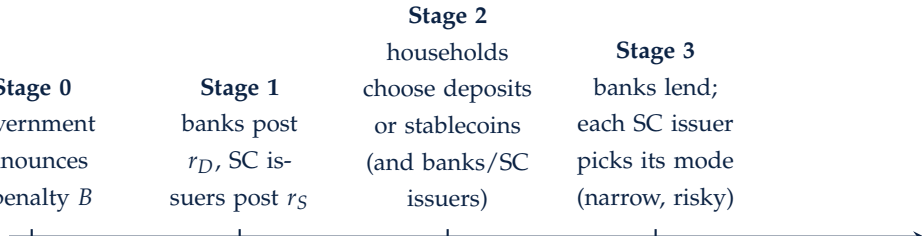
Timing


Stage 0
government announces a penalty B
Stage 1
banks post r_D, SC issuers post r_S

Timing

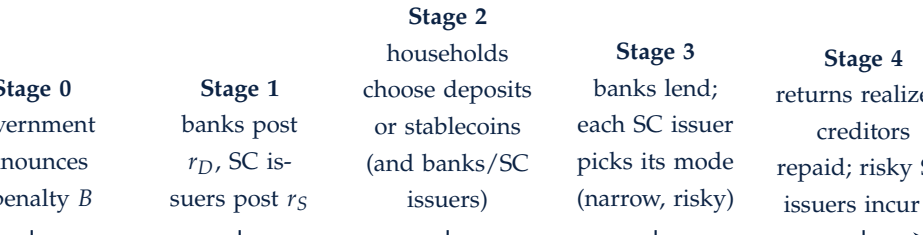

Stage 0
government announces a penalty B
Stage 1
banks post r_D, SC issuers post r_S
Stage 2
households choose deposits or stablecoins (and banks/SC issuers)

Timing



$\Rightarrow$ **Time inconsistency**: the mode is chosen after the funds are raised at the promised rate, so a SC issuer may prefer to break its pledge

Timing



$\Rightarrow$ **Time inconsistency**: the mode is chosen after the funds are raised at the promised rate, so a SC issuer may prefer to break its pledge

Equilibrium

Stage 3: the SC issuer's incentives to be risky

- Having raised funds at r_S, a SC issuer stays **narrow** iff that earns at least as much per unit as **risky**, which repays only on success:

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

Stage 3: the SC issuer's incentives to be risky

- Having raised funds at r_S, a SC issuer stays **narrow** iff that earns at least as much per unit as **risky**, which repays only on success:

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

- Equivalently, a SC issuer stays narrow iff r_S is at most the **credibility frontier**, the highest rate it can credibly pay:

$$r_S \;\leq\; \tilde{r}_S(B) \;\equiv\; \frac{B + R_G - qR_P}{1 - q}$$

Stage 2: household demand

- Households infer the SC issuer's mode from $\tilde{r}_S(B)$. A stablecoin is worth $V_S + \epsilon_i$, with

$$V_S = \begin{cases} r_S & \text{if } r_S \leq \tilde{r}_S(B) \quad \text{(narrow)}, \\ q\, r_S & \text{if } r_S > \tilde{r}_S(B) \quad \text{(risky)}. \end{cases}$$

Stage 2: household demand

- Households infer the SC issuer's mode from $\tilde{r}_S(B)$. A stablecoin is worth $V_S + \epsilon_i$, with

$$V_S = \begin{cases} r_S & \text{if } r_S \leq \tilde{r}_S(B) \quad \text{(narrow)}, \\ q\, r_S & \text{if } r_S > \tilde{r}_S(B) \quad \text{(risky)}. \end{cases}$$

- Household i holds stablecoins iff $V_S + \epsilon_i \geq p\, r_D$, that is, iff $\epsilon_i \geq \hat{\epsilon} \equiv p\, r_D - V_S$



Stage 2: household demand

- Households infer the SC issuer's mode from $\tilde{r}_S(B)$. A stablecoin is worth $V_S + \epsilon_i$, with

$$V_S = \begin{cases} r_S & \text{if } r_S \leq \tilde{r}_S(B) \quad \text{(narrow)}, \\ q\, r_S & \text{if } r_S > \tilde{r}_S(B) \quad \text{(risky)}. \end{cases}$$

- Household i holds stablecoins iff $V_S + \epsilon_i \geq p\, r_D$, that is, iff $\epsilon_i \geq \hat{\epsilon} \equiv p\, r_D - V_S$



Stage 1: setting rates

- **Banks**: Competition on rates yields $r_D = R_P$, so a deposit is worth pR_P

Stage 1: setting rates

- **Banks**: Competition on rates yields $r_D = R_P$, so a deposit is worth pR_P
- **SC issuers**: competition drives the value V_S to the highest level with a non-negative margin
  - **Best risky offer**: zero margin at $r_S = R_P - B/q$. Value for households: $V_S = qr_S = qR_P - B$
  - **Best narrow offer**: the credible rate $\tilde{r}_S(B)$, up to R_G. $V_S = \tilde{r}_S(B)$

Stage 1: setting rates

- **Banks**: Competition on rates yields $r_D = R_P$, so a deposit is worth pR_P
- **SC issuers**: competition drives the value V_S to the highest level with a non-negative margin
  - **Best risky offer**: zero margin at $r_S = R_P - B/q$. Value for households: $V_S = qr_S = qR_P - B$
  - **Best narrow offer**: the credible rate $\tilde{r}_S(B)$, up to R_G. $V_S = \tilde{r}_S(B)$
- Narrow outcompetes risky iff

$$\tilde{r}_S(B) \;\geq\; qR_P - B$$

- Narrow is feasible iff

$$\tilde{r}_S(B) \;\geq\; 1$$

Stage 1: setting rates

- **Banks**: Competition on rates yields $r_D = R_P$, so a deposit is worth pR_P
- **SC issuers**: competition drives the value V_S to the highest level with a non-negative margin
  - **Best risky offer**: zero margin at $r_S = R_P - B/q$. Value for households: $V_S = qr_S = qR_P - B$
  - **Best narrow offer**: the credible rate $\tilde{r}_S(B)$, up to R_G. $V_S = \tilde{r}_S(B)$
- Narrow outcompetes risky iff

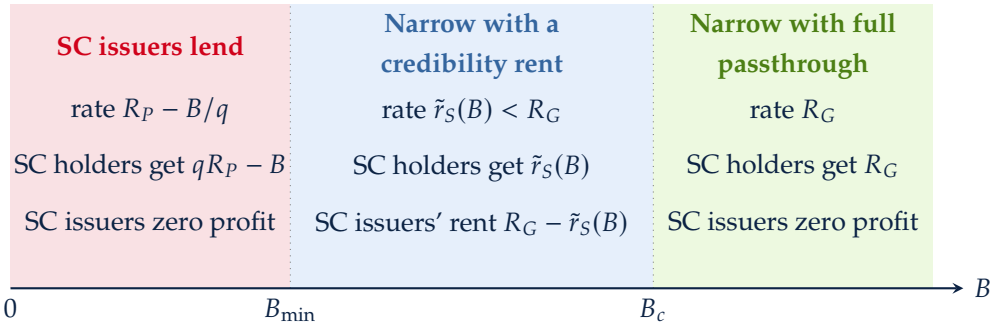
$$\tilde{r}_S(B) \;\geq\; qR_P - B$$

- Narrow is feasible iff

$$\tilde{r}_S(B) \;\geq\; 1$$

- A higher B raises $\tilde{r}_S(B)$ and lowers $qR_P - B$: narrow becomes both **more competitive** and **more feasible**

Equilibrium



- Banks offer $r_D = R_P$ in all three cases

Welfare

Welfare

- **Welfare** W is household utility plus intermediary profits, net of penalties paid. Interest nets out, so only the **end uses of funds** count

Welfare

- **Welfare** W is household utility plus intermediary profits, net of penalties paid. Interest nets out, so only the **end uses of funds** count

- Each household holding deposits contributes pR_P in expected output

$$W = \begin{cases} \mu_D \, pR_P \\ \\ \mu_D \, pR_P \end{cases}$$

Welfare

- **Welfare** W is household utility plus intermediary profits, net of penalties paid. Interest nets out, so only the **end uses of funds** count
- Each household holding deposits contributes pR_P in expected output
- Each household holding stablecoins contributes the return on the backing asset: R_G if narrow, $qR_P - B$ if risky

$$W = \begin{cases} \mu_D \, pR_P + \mu_S \, R_G & \textbf{narrow} \\ \mu_D \, pR_P + \mu_S \, (qR_P - B) & \textbf{risky} \end{cases}$$

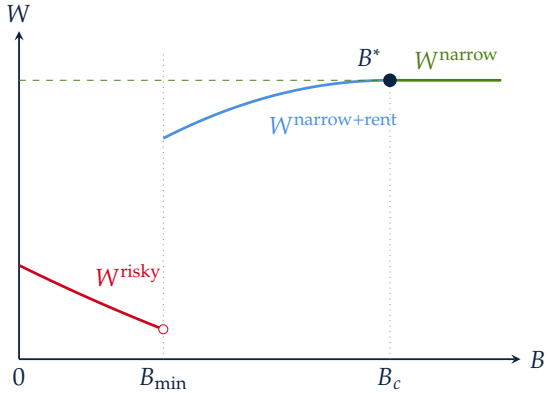
Welfare

- **Welfare** W is household utility plus intermediary profits, net of penalties paid. Interest nets out, so only the **end uses of funds** count
- Each household holding deposits contributes pR_P in expected output
- Each household holding stablecoins contributes the return on the backing asset: R_G if narrow, $qR_P - B$ if risky
- The last term is the taste surplus of stablecoin holders

$$W = \begin{cases} \mu_D \, pR_P + \mu_S \, R_G + \dfrac{\beta^2 - \hat{\epsilon}^2}{4\beta} & \textbf{narrow} \\ \mu_D \, pR_P + \mu_S \, (qR_P - B) + \dfrac{\beta^2 - \hat{\epsilon}^2}{4\beta} & \textbf{risky} \end{cases}$$

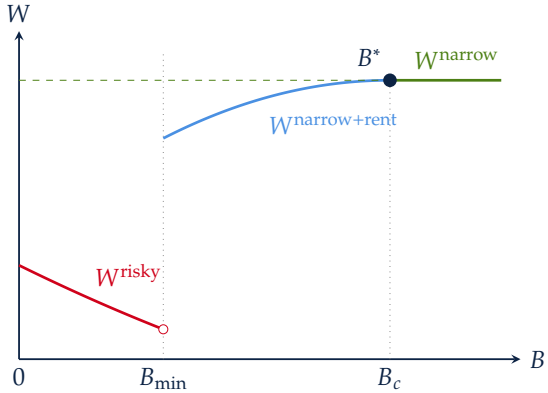
Optimal regulation

Optimal regulation



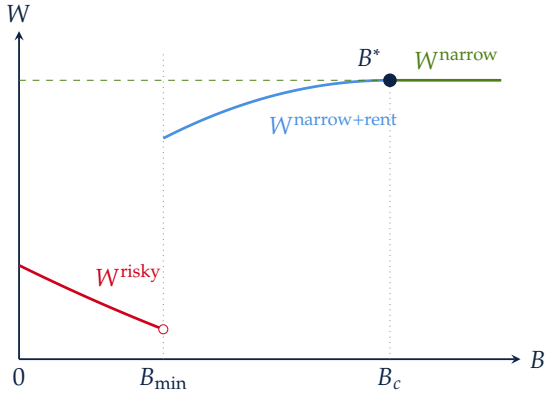
- Risky lending by SC issuers is inefficient, so welfare **jumps up** as SC issuers turn narrow at $B_{\min}$

Optimal regulation



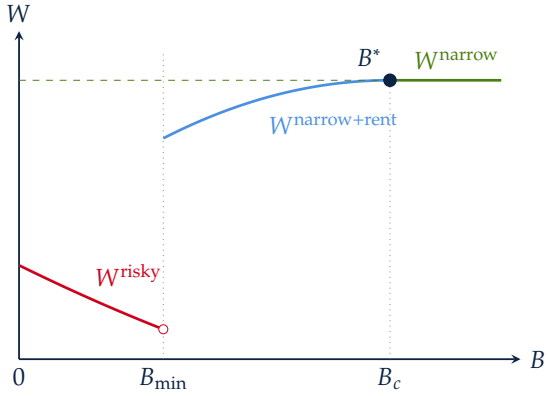
- Risky lending by SC issuers is inefficient, so welfare **jumps up** as SC issuers turn narrow at $B_{\min}$
- Welfare rises as SC issuers pass through more of the safe yield

Optimal regulation



- Risky lending by SC issuers is inefficient, so welfare **jumps up** as SC issuers turn narrow at $B_{\min}$
- Welfare rises as SC issuers pass through more of the safe yield
- Welfare is maximized at the penalty $B^* = B_c = q(R_P - R_G)$

Optimal regulation



- Risky lending by SC issuers is inefficient, so welfare **jumps up** as SC issuers turn narrow at $B_{\min}$
- Welfare rises as SC issuers pass through more of the safe yield
- Welfare is maximized at the penalty $B^* = B_c = q(R_P - R_G)$
- SC issuers prefer $B_{\min}$ over B_c, which leaves them a credibility rent

Why is full pass-through optimal?

- At the optimal penalty B^*, SC issuers stay narrow and pass through the full safe return R_G

Why is full pass-through optimal?

- At the optimal penalty B^*, SC issuers stay narrow and pass through the full safe return R_G
- But every unit held in stablecoins is a unit withdrawn from bank lending: **bank disintermediation**

Why is full pass-through optimal?

- At the optimal penalty B^*, SC issuers stay narrow and pass through the full safe return R_G
- But every unit held in stablecoins is a unit withdrawn from bank lending: **bank disintermediation**
- Why is it optimal for SC issuers to pass through all interest? Should stablecoin interest be banned?

Full pass-through balances disintermediation and taste

- At $B^* = B_c$, household i holds stablecoins iff $R_G + \epsilon_i \geq pR_P$, that is, iff

$$\epsilon_i \;\geq\; \hat{\epsilon}^* \;\equiv\; pR_P - R_G$$

Full pass-through balances disintermediation and taste

- At $B^* = B_c$, household i holds stablecoins iff $R_G + \epsilon_i \geq pR_P$, that is, iff

$$\epsilon_i \;\geq\; \hat{\epsilon}^* \;\equiv\; pR_P - R_G$$

- $pR_P - R_G$ is the **disintermediation cost**: the expected output lost when a unit moves from bank lending to safe assets

Full pass-through balances disintermediation and taste

- At $B^* = B_c$, household i holds stablecoins iff $R_G + \epsilon_i \geq pR_P$, that is, iff

$$\epsilon_i \;\geq\; \hat{\epsilon}^* \;\equiv\; pR_P - R_G$$

- $pR_P - R_G$ is the **disintermediation cost**: the expected output lost when a unit moves from bank lending to safe assets
- Moving household i into deposits changes welfare by $(pR_P - R_G) - \epsilon_i$, which is positive iff $\epsilon_i < \hat{\epsilon}^*$

Full pass-through balances disintermediation and taste

- At $B^* = B_c$, household i holds stablecoins iff $R_G + \epsilon_i \geq pR_P$, that is, iff

$$\epsilon_i \;\geq\; \hat{\epsilon}^* \;\equiv\; pR_P - R_G$$

- $pR_P - R_G$ is the **disintermediation cost**: the expected output lost when a unit moves from bank lending to safe assets
- Moving household i into deposits changes welfare by $(pR_P - R_G) - \epsilon_i$, which is positive iff $\epsilon_i < \hat{\epsilon}^*$
- A ban on stablecoin interest distorts prices: it raises the cutoff to $pR_P - 1$, moving households away from the welfare-optimal allocation, so it is **never optimal**

Full pass-through balances disintermediation and taste

- At $B^* = B_c$, household i holds stablecoins iff $R_G + \epsilon_i \geq pR_P$, that is, iff

$$\epsilon_i \;\geq\; \hat{\epsilon}^* \;\equiv\; pR_P - R_G$$

- $pR_P - R_G$ is the **disintermediation cost**: the expected output lost when a unit moves from bank lending to safe assets
- Moving household i into deposits changes welfare by $(pR_P - R_G) - \epsilon_i$, which is positive iff $\epsilon_i < \hat{\epsilon}^*$
- A ban on stablecoin interest distorts prices: it raises the cutoff to $pR_P - 1$, moving households away from the welfare-optimal allocation, so it is **never optimal**
- But a ban does help keep SC issuers narrow, so it could be useful if the penalty B is costly to enforce (e.g., monitoring)

Effect of monetary policy on regulation

Lower rates call for tighter regulation

- **Incentive of SC issuer to deviate**: having promised r_S, a SC issuer stays narrow iff

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

Lower rates call for tighter regulation

- **Incentive of SC issuer to deviate**: having promised r_S, a SC issuer stays narrow iff

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

- Lower R_G increases the incentives to deviate (though in equilibrium r_S also depends on R_G)
  - Holds both if regulation is in the zone where SC issuers earn a credibility rent, or pass through all yield

Lower rates call for tighter regulation

- **Incentive of SC issuer to deviate**: having promised r_S, a SC issuer stays narrow iff

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

- Lower R_G increases the incentives to deviate (though in equilibrium r_S also depends on R_G)
  - Holds both if regulation is in the zone where SC issuers earn a credibility rent, or pass through all yield

- Intuitively, as R_G falls, investing into bonds becomes less attractive, and SC issuers start "reaching for yield"

Lower rates call for tighter regulation

- **Incentive of SC issuer to deviate**: having promised r_S, a SC issuer stays narrow iff

$$R_G - r_S \;\geq\; q(R_P - r_S) - B$$

- Lower R_G increases the incentives to deviate (though in equilibrium r_S also depends on R_G)
  - Holds both if regulation is in the zone where SC issuers earn a credibility rent, or pass through all yield

- Intuitively, as R_G falls, investing into bonds becomes less attractive, and SC issuers start "reaching for yield"

$\Rightarrow$ **Lower interest rates require tighter regulation to keep stablecoins safe**

Conclusion

Conclusion

When safe assets earn more in expectation than SC issuers' loans:

- **Optimal penalties** sustain narrow stablecoins that pay holders the full safe return
- **SC issuers prefer a lower penalty**, under which they earn credibility rents
- **A ban on stablecoin interest is never optimal** when penalties are costless
- **The optimal penalty rises** as risk-free rates fall

Banking with Stablecoins

Itai Agur[1] Alexander Copestake[1] Giovanni Dell'Ariccia[1,2] Marco Reuter[1]

[1]International Monetary Fund
[2]CEPR

November, 2026

The views expressed in this presentation are those of the authors and should not be attributed to the IMF, its Executive Board, or IMF management.

Appendix

Related literature

Stablecoin-based narrow banking. Chiu and Monnet (2024); Huang and Keister (2026); Parlour, Rajan and Zhu (2026)

Self-fulfilling stablecoin runs. Ahmed, Aldasoro and Duley (2024); Araujo, Izumi and Mattesini (2026); Bertsch (2025); Gersbach and Zelzner (2026); Li et al. (2026); Liu, Makarov and Schoar (2026); Tan (2026); Uhlig (2022); Zhu (2024)

Flight-to-safety dynamics. Anadu et al. (2023); Kwon and Shim (2026); Saggese et al. (2026)

Arbitrage when direct redemption is limited. Lyons and Viswanath-Natraj (2023); Ma, Zeng and Zhang (2026); Ranaldo, Viswanath-Natraj and Wang (2026); Watsky et al. (2024)

Spillovers from safe-asset shocks. Aronoff et al. (2026); Barrios, Bertsch and Schilling (2026)

Optimal buffers for SC issuers. Carapella (2025); Goel, Lewrick and Agarwal (2026); Li and Mayer (2025)